United States Government **Department of Energy**

memorandum

Rocky Flats Office

000020132

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DATE: DEC 3 0 1991

REPLY TO ATTN OF: ERD:BKT:8052

SUBJECT: Floodplain Notification and Assessment for the Operating IM/IRA at OU2 (South Walnut Creek)

TO: Richard A. Claytor, Assistant Secretary for Defense Programs, DP-1, HQ
Leo P. Duffy, Acting Assistant Secretary, Environmental Restoration & Waste Management, EM-1, HQ

THRU: Victor Stello, Jr., Principal Deputy Assistant Secretary for Facilities, DP-6, HQ
DAK 12/23/91

Please find attached a floodplain notification and floodplain assessment for the operating Interim Measure/Interim Remedial Action at OU 2 (South Walnut Creek) at the Rocky Flats Plant. Note that there were no wetland effects resulting from this action. Public review is required of the floodplain action by 10CFR1022.14, while a floodplain assessment is required by 10CFR1022.12. Note that since an Environmental Impact Statement was not required for this action, the publication of a Public Notice of floodplain action in the Federal Register is necessary.

Due to the schedule requirements imposed by the Interagency Agreement (IAG) signed January 22, 1991, by the U.S Department of Energy (DOE), U.S. Environmental Protection Agency and the State of Colorado, the DOE Rocky Flats Office made the decision to implement the action prior to meeting the public review requirements of 10CFR1022.14 since a floodplain notification was not prepared early in the process. The alternative was the possiblity of facing stipulated penalties per the IAG. As a result, the floodplain notification has been written to reflect that the action has already been initiated.

We request that both the floodplain notification and floodplain assessment be reviewed for compliance with 10CFR1022 and Executive Order 11988. In addition, we request that the notification be placed in the Federal Register for public review.

Robert M. Nelson, Jr.
Manager

Attachment

DOCUMENT CLASSIFICATION REVIEW WAIVER PER CLASSIFICATION OFFICE

1/7

cc w/Attachment:
L. Barrett, DP-6.1
A. Rampertaap, EM-453
D. Simonson, DOE/RFO
F. Lockhart, DOE/RFO
R. Schassburger, DOE/RFO
S. Grace, DOE/RFO
B. Thatcher, DOE/RFO
J. Kersh, EG&G/RF

FLOODPLAIN ASSESSMENT FOR THE OU2 (SOUTH WALNUT CREEK) INTERIM MEASURE/INTERIM REMEDIAL ACTION

Project Description

The Department of Energy (DOE) has constructed an interim measure/interim remedial action (IM/IRA) under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Resource Recovery and Conservation Act (RCRA) involving construction of a system to collect, pump and treat surface water in the upper reach of South Walnut Creek in operable unit (OU) 2 (903 Pad, Mound and East Trenches) at DOE's Rocky Flats Plant (RFP) north of Golden, CO. OU2 is located immediately east of the developed area of RFP in the Plant's buffer zone. A general plan of the IM/IRA is shown in Figure 1. The system consists of three covered concrete boxes (identified as surface water collection points SW 59, SW 61 and SW 132 in Figure 1), each approximately two feet wide by four feet long by two feet high, to accumulate water. Two of the boxes (SW 61 and SW 132) are located in the stream while SW 59 is located approximately twenty feet away from the stream at a seep. As these collection points accumulate water, automatic pumps are periodically activated to pump the water up the adjacent hillside through double-walled, insulated, above-ground pipes to a treatment plant. The treatment plant is located outside the floodplain in RFP's Buffer Zone, just north of the East Access Road. After treatment, the water is returned to South Walnut Creek at a point immediately downstream of SW 132 via a second pipe.

While a preliminary floodplain study of South Walnut Creek has recently been completed, the study did not go as far up the Creek as the area of the IM/IRA. However, the location of the collection facilities in or near the drainageway makes it virtually certain that at least two of the collection boxes (SW 61 and SW 132) and a length of piping are located within the South Walnut Creek floodplain. Construction of the collection boxes, installation of the piping and operation of the pumping system constitute the extent of actions within the floodplain.

Floodplain Effects

The concrete collection boxes, supports for the above-ground pipes and the pipes themselves may present some barrier to the flow of water in case of a flood event. Immediately upstream from SW 61 are two culverts that carry South Walnut Creek under the security fence around the Protected Area. Immediately downstream of SW 132 is another culvert that carries the Creek under a road. The culverts upstream of SW 61 have security devices on them to prevent unauthorized entry to the Protected Area. Those devices, plus the fact that the Creek at this point drains developed areas of the RFP, the majority of which are unvegetated (buildings, parking lots, roads, etc.), reduce the likelihood of a significant amount of debris entering the project area and being trapped by the boxes and piping. Consequently, the effect of the boxes and piping on the height and width of the floodplain are believed to be insignificant.

The South Walnut Creek basin in the area of the IM/IRA is very constrained because of the natural slopes of the drainage and the presence of large barriers in the form of roads crossing the Creek immediately upstream and downstream of the project area. Since 1) there are no other constructions in the floodplain area except the outfall from the RFP sewage treatment plant which enters the Creek below SW 132, and 2) the more likely factor in raising the flood elevation is the small size of the existing culvert below SW 132, it is believed that the presence of project facilities will have very little, if any, effect on the floodplain or the elevation of the 100-year flood and that any such effect would cause no damage to any property or elements of the natural environment.

Alternatives

No Action Alternative

DOE is required under CERCLA and its Interagency Agreement with the Environmental Protection Agency (EPA) and the Colorado Department of Health (CDH) to remediate Walnut Creek surface waters at OU2. The No Action Alternative would place DOE in violation of CERCLA and its Agreement with regulatory agencies and so was dismissed as unreasonable.

Alternative Collection Strategies

The portion of the project that is in the floodplain is the water collection system. In order to remediate the OU2 South Walnut Creek surface waters, they must be collected and transported away from the stream to a treatment facility. Three collection alternatives were considered. The first was collection of surface waters at or near the source. This technique uses diversion structures at the seep or in-stream stations to divert the water into collection sumps. This method was agreed to at the staff level by DOE, EPA and CDH early in 1990 and is the method that was selected for use after public comment.

A second method of water collection that was considered was ground water withdrawal using an upgradient well array or French drain. This technique lowers the ground water table and eliminates seepage, allowing separation of contaminated ground water (seepage) from surface water runoff. However, the hydrogeology at OU2 is not adequately understood to design an effective ground water withdrawal system. Consequently, collection of South Walnut Creek basin surface waters by groundwater withdrawal was dismissed as not feasible at this time.

The third method of water collection considered was to allow the contaminated surface water to flow through the South Walnut Creek drainage into Pond B-5 from which it would be withdrawn with other waters and treated. This system has three drawbacks. First, there is the potential of transferring the surface water contaminants to ground waters within the South Walnut Creek basin via infiltration. Secondly, release of volatile organic compounds to the atmosphere would occur while the surface water is in transit to the Pond. Finally, allowing South Walnut Creek surface waters to mix with other waters retained in Pond B-5 would generally increase the volume of dilute contaminated water at RFP that may require treatment. For these reasons, collection of South Walnut Creek surface water at Pond B-5 was eliminated from further consideration.

Effects of the Action on the Floodplain

Construction of the IM/IRA had virtually no effects on the floodplain or the elevation of the 100-year flood and operation of the IM/IRA is expected to have the same level of impacts. Very localized and temporary construction disturbances took place at the collection box sites. Installation of the pipelines had almost no impacts inasmuch as the pipes are elevated, supported by metal fence posts about two feet above the ground.

The treatment plant is located outside the floodplain on the top of a hill to the southeast of the collection points, so its construction and operation have no impacts to the floodplain.

Other than those just described, there have not been, nor are there expected to be, any positive, negative, direct, indirect, short- or long-term effects from the IM/IRA on the floodplain.

AGENCY: Department of Energy

ACTION: Notice of an Action That Has Occurred in a Floodplain

SUMMARY: The Department of Energy issues this notice of an action that has occurred in a floodplain. The action was construction of an interim measure/interim remedial action (IM/IRA) under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCTA), involving building a system to collect, pump and treat surface water in the upper reach of South Walnut Creek in operable unit (OU) 2 (903 Pad, Mound and East Trenches) at DOE's Rocky Flats Plant (RFP) north of Golden, CO. OU2 is located immediately southeast of the developed area of RFP in the Plant's buffer zone. A general plan of the IM/IRA is shown in Figure 1. The system consists of three covered concrete boxes (identified as surface water collection points SW 59, SW 61 and SW 132 in Figure 1), each approximately twenty feet away from the stream at a seep. As these collection points accumulate water, automatic pumps are periodically activated and pump the water up the adjacent hillside through double-walled, insulated, above-ground pipes to a treatment plant. The treatment plant is located outside the floodplain in RFP's Buffer Zone, just north of the East Access Road. After treatment, the water is returned to South Walnut Creek at a point immediately downstream of SW 132 via a second pipe.

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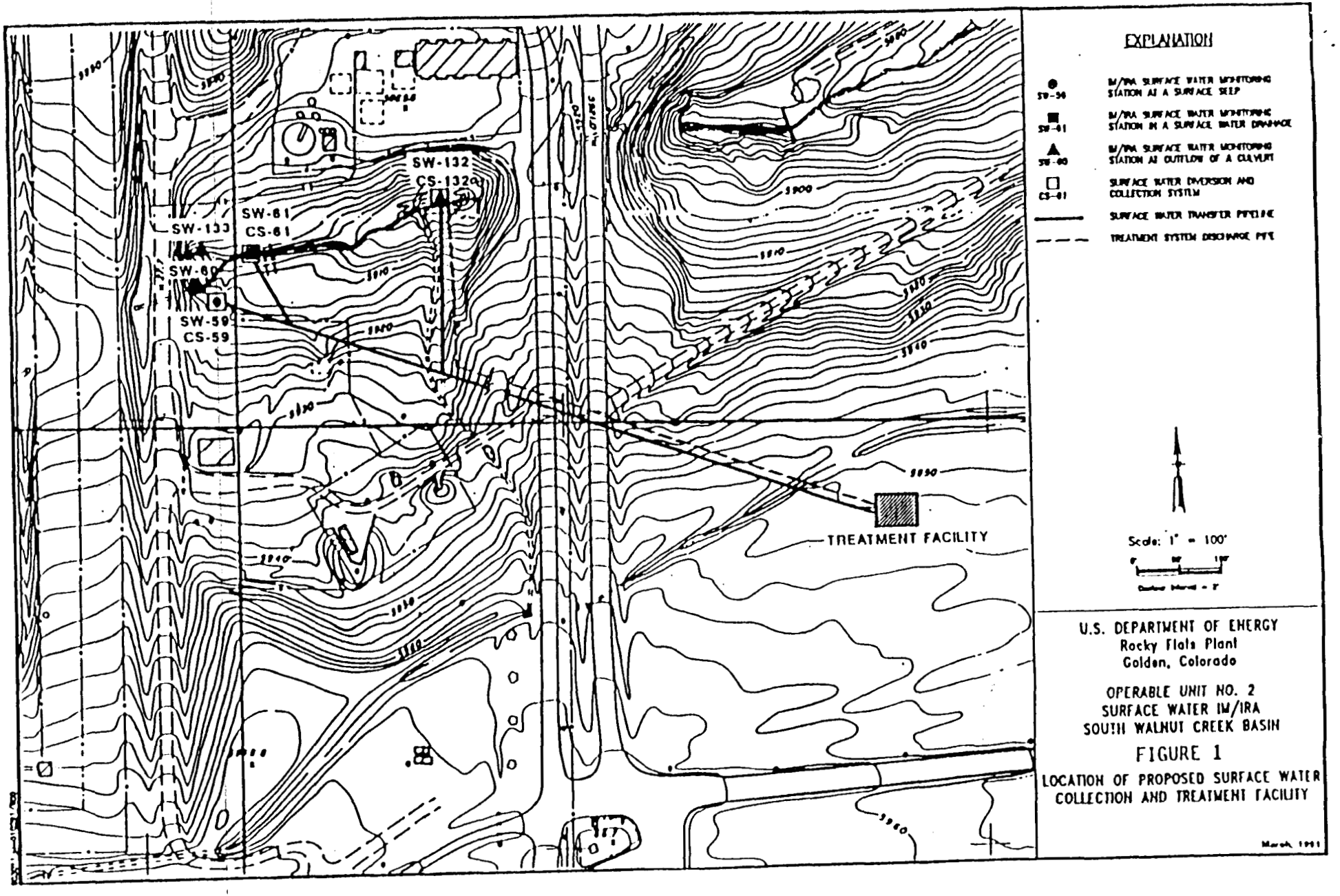
SW-132
CS-132
SW-61
CS-61
SW-133
SW-60
SW-59
CS-59
TREATMENT FACILITY
EXPLANATION
SW-56 IM/IRA SURFACE WATER MONITORING STATION AT A SURFACE SEEP
SW-61 IM/IRA SURFACE WATER MONITORING STATION IN A SURFACE WATER DRAINAGE
SW-60 IM/IRA SURFACE WATER MONITORING STATION AT OUTFLOW OF A CULVERT
CS-61 SURFACE WATER DIVERSION AND COLLECTION SYSTEM
SURFACE WATER TRANSFER PIPELINE
TREATMENT SYSTEM DISCHARGE PIPE
Scale: 1" = 100'
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado
OPERABLE UNIT NO. 2
SURFACE WATER IM/IRA
SOUTH WALNUT CREEK BASIN
FIGURE 1
LOCATION OF PROPOSED SURFACE WATER COLLECTION AND TREATMENT FACILITY
March 1991